

## NEW RECORDS OF SCARABAEIDAE (COLEOPTERA) FROM CENTRAL AUSTRALIA

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### Abstract

New distribution records and collection notes are presented for 45 species of Scarabaeidae collected in central Australia. Subfamilies represented are: Melolonthinae, 18 species; Aclopiinae, 1 species; Dynastinae, 6 species; Rutelinae, 1 species; Scarabaeinae, 5 species; Aphodiinae, 1 species; Geotrupinae, 13 species.

### Introduction

Central Australia lies within the area delimited by the 380mm isohyet of median annual precipitation for the summer maximum rainfall areas and by the 255 mm isohyet for the winter maximum or seasonal uniform rainfall areas in the south (Taylor and Shurcliff 1983). The topography is typified by a number of distinct east-west ranges forming an archipelago of more mesic habitats within a xeric sea of dune fields, sand plains, gibber plains and salt flats. This suggests that the ranges may be important reservoirs of biological diversity and also that they may function as refugia during periods of increased aridity (Taylor and Shurcliff 1983).

In common with the range flora, the range fauna (and indeed the fauna of all central Australia) has been collected only sporadically, with most collecting being concentrated on the MacDonnell Ranges (Taylor and Shurcliff 1983). During the course of two visits to central Australia (by the senior author in April 1978 and by both authors in April-May 1982) scarabs were collected at a number of sites. The second visit we think very important as it occurred 4-5 weeks after very heavy and wide-spread rainfall—153 mm at Giles Weather Station for 26-28 March and 230 mm at Ayers Rock for 25-28 March.

### Melolonthinae

*Lepidiota squamulata* Waterhouse

1, 20 km NW of Areyonga, N.T., 4.v.1982.

A very abraded and dark brown specimen found dead. This species is the most widely distributed species of the genus in Australia and has previously been recorded from three localities in central Australia (Britton 1978). The new record extends the known Northern Territory distribution towards that of Western Australia.

*Liparetrus semiatriceps* Lea

1, Giles Weather Stn, W.A., 30.iv.1982.

Known from four localities in central Australia (Britton 1980). The present record extends the distribution to the south and bridges the gap between the Coniston Station, N.T., and Cossack-Millstream, W.A., records. The specimen was dead when found.

*Liparetrus* sp.

1, Docker River, N.T., 28.iv.1982.

An apparently new species (Britton pers. comm.) belonging to the *rufipennis* species-group but it will not key out past couplet 195 (Britton 1980) as the antennae are missing. Three other species of the *rufipennis* species-group, *semiatriceps*, *distinctus* Lea and *politus* Britton, are known from the southern Northern Territory. The present specimen was dead when found in a spiders web and is in poor condition. Further specimens would be required before a new species could be described.

*Colpochila rufocastanea* (Lea)

12, Giles Weather Stn, W.A., 30.iv.1982; Wallara, N.T., 2.v.1982.

All specimens were dead when found. The type locality is the Peterman Ranges (Lea 1930).

*Colpochila spadix* (Blackburn)

1, Alice Springs, N.T., 20.iv.1978.

Collected at light. Blackburn (1906) gives the type locality as the Murchison district, N.W. Australia.

*Colpochila* sp. "g"

1, Marla Bore, S.A., 25.iv.1978; 3, Ayers Rock, N.T., 25-27.iv.1982.

All specimens were attracted to light. The species is described by E. B. Britton in his forthcoming revision of the genus.

*Colpochila* sp. "i"

1, Curtin Springs, N.T., 23.iv.1978.

Although dead when collected, the specimen was fresh and apparently had been attracted to light. It is to be described by E. B. Britton.

*Gnaphalopoda simplex* (Lea)

1, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected. The type locality is the junction of the Fitzroy and Margaret Rivers N.W. Australia (Lea 1917), about 800 km to the north-west.

*Gnaphalopoda bidentata* (Lea)

3, Ayers Rock, N.T., 25-27.iv.1982; 5, Giles Weather Stn, W.A., 30.iv.1982.

Specimens from Giles were dead when collected, those from Ayers Rock were attracted to light. The type locality is either Murat Bay or Ooldea, South Australia (Lea 1917), over 550 km to the south.

*Sciton* sp. "a"

4, Giles Weather Stn, W.A., 30.iv.1982.

A species to be described by E. B. Britton. The specimens were dead when collected.

*Heteronyx* sp. nr. *doddi* Blackburn

1, Ayers Rock, N.T., 25-27.iv.1982.

An apparently undescribed species (E. B. Britton, pers. comm.) taken at light. The type locality of *H. doddi* is Sth. Queensland but other closely-related species, e.g. *squalidus* Blackburn, *dispar* Blackburn and *litigosus* Blackburn, are known from inland arid Australia (Blackburn 1908).

*Heteronyx* sp. nr. *apterus* Blackburn

1, Reedy Rockhole, near Kings Canyon, N.T., 3.v.1982.

An apparently undescribed species (E. B. Britton pers. comm.) taken at light. The type locality of *H. apterus* is Perth (Blackburn 1910).

*Heteronyx* sp. 1

1, Marla Bore, S.A., 25.iv.1978.

Taken at light.

*Heteronyx* sp. 2

5, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected. Some specimens were very bleached.

*Heteronyx* sp. 3

1, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected.

*Heteronyx* sp. 4

1, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected.

*Heteronyx* sp. 5

1, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected.

*Sphyrocallus* sp.

3, 10 km W of Docker River Settlement, N.T., 30.iv.1982.

Flying about mid-day. One specimen landed on the edge of a camp fire and the others were found in a large shallow pan of water which had been exposed for only about 30 minutes. Other specimens were seen but they evaded capture. The genus belongs to the Systellopini of which there are 14 described species (Dalla Torre 1912). The majority occur in inland Australia and are poorly known. Sharp (1877) provided a key to eight species and the above specimens key to *S. brunneus* Sharp. They do not, however, agree with a specimen labelled as such in the South Australian Museum or with the description of *S. bicolor* Blackburn (1905) and probably represent a new species.

**Aclopiinae**

*Phaenognatha angusta* Arrow

1, Tea Tree, N.T., 20.iv.1978.

The species occurs in the central and northern parts of the Northern Territory and the inland part of Queensland (Allsopp 1981). This specimen was collected outside the window of an isolated building indicating it had been attracted by light.

**Dynastinae**

*Cryptoryctes wingarus* Carne

1, Curtin Springs, N.T., 23.iv.1978.

This species was known only from the holotype male collected at an unknown location in Western Australia in November 1897 (Carne 1957a). The present specimen, a male, was found dead and had the middle and hind legs missing. The lateral points of the anterior horns are longer and more curved than those of the holotype (Carne 1957a, fig. 415).

*Semanopteris rectangularis* Blackburn

1, Ayers Rock, N.T., 25-27.iv.1982; 1, Glen Helen, N.T. 5.v.1982.

A species widely distributed throughout Australia. The above represents two new locality records and extends the collection dates to May.

*Neodon bidens* (Blackburn)

2, Ormiston Gorge, N.T., 6.v.1982; 3, Ellery Big Hole, N.T., 7.v.1982.

Carne (1957a) records this species from only Alice Springs and Tennant Creek during November. The Ormiston Gorge record extends the range more than 100 km to the west.

*Neodon glauerti* Carne

1, Ayers Rock, N.T., 25-27.iv.1982; 8, Giles Weather Stn, W.A., 30.iv.1982.

All specimens were dead when collected. Collected previously at Onslow and Roebourne, W.A. and Alice Springs (Carne 1957a), the new specimens help close the gap in the distribution. The only previous date of collection was in November.

*Neodon pecuarius* Reiche

3, Ayers Rock, N.T., 25-27.iv.1982.

A species widely distributed throughout Australia and previously collected in all months except July (Carne 1957a).

*Cryptodus caviceps* Westwood

3, Ayers Rock, N.T., 25-27.iv.1982; 3, Giles Weather Stn, W.A., 30.iv.1982.

Widely distributed throughout Australia but previously only recorded in central Australia from the Musgrave Ranges (Carne 1957a). The specimens from Giles were dead when collected but those from Ayers Rock were attracted to lights. The collection period is extended to April.

**Rutelinae**

*Anoplognathus macleayi macleayi* Blackburn

1, Giles Weather Stn, W.A., 30.iv.1982; 2, Palm Valley, N.T., 4.v.1982; 1, Glen Helen, N.T., 5.v.1982.

Specimens were dead when collected and severely weathered. Known only from central Australia (Carne 1957b, 1958, 1981). The Giles record is much further west than the distribution boundary for *Anoplognathus* shown by Carne (1958, map 1).

### Scarabaeinae

#### *Euonicellus intermedius* Reiche

1, Marla Bore, S.A., 25.iv.1978

A species introduced from Africa (Bornemissza 1976) and now widely distributed in inland Australia. The specimen was taken from under cow dung.

#### *Onitis alexis* Klug

1, Alice Springs, N.T., 24.iv.1982.

Collected at light. An introduced species from Africa (Bornemissza 1976) and now widely distributed in inland Australia.

#### *Onthophagus consentaneus* Harold

1, Wallara, N.T., 2.v.1982.

This species has the most extensive distribution of any Australian *Onthophagus* sp. (Matthews 1972). In central Australia Matthews records it from around Alice Springs and Hermannsburg. The specimen was taken in cow dung.

#### *Onthophagus sloanei* Blackburn

2, Alice Springs, N.T., 24.iv.1982; 1, Ayers Rock, N.T., 25-27.iv.1982; 3, Wallara, N.T., 2.v.1982; 1, Palm Valley, N.T., 4.v.1982; 1, Glen Helen, N.T., 5.v.1982; 1, Ellery Big Hole, N.T., 7.v.1982.

Specimens were taken at light and in cow dung. Matthews (1972) records it from numerous localities in central Australia. It is the most xerophilic of Australian *Onthophagus* spp. and is evidently adapted to live primarily in areas of about 200-250 mm of annual rainfall.

#### *Onthophagus* sp. nr. *clypealis* Lea

1, Ayers Rock, N.T., 25-27.iv.1982.

Undoubtedly a new species (R. I. Storey pers. comm.). Other species of the *planicollis* group are found on the east coast and around the Gulf of Carpentaria but all are rare and nothing is known of their ecology (Matthews 1972).

### Aphodiinae

#### *Aphodius lividus* Olivier

1, Alice Springs, N.T., 24.iv.1982; 1, Wallara, N.T., 2.v.1982.

A species accidentally introduced from Europe and now widely distributed. The first specimen was taken at light, the second in cow dung.

### Geotrupinae

#### *Blackburnium macleayi* (Blackburn)

1, Tea Tree, N.T., 20.iv.1978.

Howden (1979) remarked on the apparent disjunct distribution of this species in eastern Queensland and coastal central Western Australia. This record bridges the gap between these records. It was found dead outside a window and had presumably been attracted to light.

#### *Blackburnium sloanei* (Blackburn)

2, Ayers Rock, N.T., 25-27.iv.1982; 4, Wallara, N.T., 2.v.1982.

Taken in burrows at Wallara and at light at Ayers Rock. The Wallara burrows were in a well-watered lawn surrounding the homestead and the beetles were only about 10 cm below the surface. The species is widely distributed across Australia, the present records are to the south-west of the previous central Australian collections (Howden 1979).

#### *Blackburnium cooperi* Howden

1, Wallara, N.T., 2.v.1982.

Taken in burrows in the same area as *B. sloanei*. The only previous record from the Northern Territory was Ayers Rock (Howden 1979), 170 km to the south-west.

*Blackburnium harslettae* Howden

1, Ayers Rock, N.T., 25-27.iv.1982; 1, Wallara, N.T., 2.v.1982.

Known previously from the Northern Territory only from Ayers Rock (Howden 1979). The Wallara specimen is a male major and is the first of that development to be collected; the type series was three minor males, one female and one whose sex was not stated. Howden (1984) contends that this major male demonstrates that *B. harslettae* and *B. triceratops* Howden are distinct species despite the reservations expressed by Howden (1979: 61). The Wallara specimen was dug from a burrow and the other collected at light.

*Blackburnium centrale* Howden

2, Ayers Rock, N.T., 25-27.iv.1982; 1, Ayers Rock, N.T., 1.v.1982.

All specimens were collected at light. These records extend the known distribution ca 100 km to the east from the record of the paratype at Armstrong Creek, N.T. (Howden 1979).

*Blackburnium* sp.

1, Ayers Rock, N.T., 25-27.iv.1982.

A female taken at light which could not be assigned to any species.

*Bolborachium* sp. nr. *fissicorne* (Bainbridge)

1, Alice Springs, N.T., 24.iv.1982.

Collected from a burrow 15 cm deep in a well-watered lawn.

*Bolborachium* sp. "k"

2, Ayers Rock, N.T., 25-27.iv.1982.

A new species to be described by H. F. Howden. Howden and Cooper (1977, fig. 76) do not show any *Bolborachium* spp. occurring in central Australia, although one species has an apparent disjunct distribution in south-western Western Australia and south-central Queensland that might be a reflection of inadequate collecting. The specimens were attracted to light.

*Bolboaeinus planiceps* (Macleay)

2, Ayers Rock, N.T., 25-27.iv.1982.

Collected at light. *Bolboaeinus* spp. are known from northern Australia and some dry inland localities south to South Australia (Howden and Cooper 1977).

*Bolboleaus truncatus* (Blackburn)

1, Alice Springs, N.T., 24.iv.1982; 1, Ayers Rock, N.T., 25-27.iv.1982; 9, Giles Weather Stn, W.A., 30.iv.1982; 2, Wallara, N.T., 2.v.1982; 1, Tea Tree, N.T., 20.iv.1978.

The first two specimens were collected at light, those from Giles and Tea Tree were dead when collected and those from Wallara were dug from burrows 10-15 cm deep. Howden and Cooper (1977, fig. 75) do not record any *Bolboleaus* spp. from south-western Northern Territory or adjacent areas of Western and South Australia. The type locality is 'N. Queensland' (Blackburn 1904).

*Australobolbus basedowi* (Blackburn)

1, Giles Weather Stn, W.A., 30.iv.1982.

Dead when collected. The type locality is 'Central Australia', the specimens probably coming from the Musgrave Ranges (Blackburn 1904).

*Australobolbus laevipes* (Blackburn)

5, Ayers Rock, N.T., 25-27.iv.1982; 1, Giles Weather Stn, W.A., 30.iv.1982.

The Ayers Rock specimens were collected at lights, that from Giles was dead when collected. The type locality is 'N.W. Australia' (Blackburn 1904).

*Australobolbus* sp. nr. *carinatus* (Blackburn)

2, Ayers Rock, N.T., 25-27.iv.1982; 3, Giles Weather Stn, W.A., 30.iv.1982; 1, Tea Tree, N.T., 20.iv.1978.

Those from Ayers Rock were collected at lights while all specimens from Giles and Tea Tree were dead when collected.

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